

ABSTRACT OF THE DISCLOSURE

In a method and apparatus for controlling power factor correction in mixed operation modes, a frequency of the input voltage is obtained by detecting the zero crossing points of the input voltage. A peak of the input voltage is obtained by detecting input voltage with 90 degree phase. Thus, the present invention predicts the input voltage by its frequency and peak and the characteristic of the sine wave. A digital signal processor computes the duty and frequency of a boost switch, switching the operation mode of the boost converter among continuous mode, critical mode and discontinuous mode according to input voltage or the load. According to another aspect, the operation is switched to critical mode from the average current mode when a zero current is detected before the charging and recharging cycle of the boost switch is finished.